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ABSTRACT

Error analysis is considered both a part of the methodology for the psycholinguistic investigation of the second language acquisition process as well as a part of the teaching-learning methods and materials re-evaluation process. The language acquisition process is a dynamic process governed by the principles of hypothesis formulation, testing and re-evaluation. Systematic errors reveal the state of a learner's approximative system at each successive stage of learning. In the investigation of the acquisition of "case" in German, an error analysis tentatively reveals five stages of development from a "caseless" system to a stable and coherent "two-case" interlanguage system. Both Corder's and Richards' categories of error types and Corder's algorithm are then used to illustrate the discovery of idiosyncratic sentences, the recognition and categorization of learners' errors, and the formulation of authoritative or plausible reconstructed sentences in data provided by learners of English as a second language. These analyses of errors should enable the teacher to supply the learner with the right kind of data for the formulation of more adequate concepts of the rules in the target language. (Author/CFM)

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Error Analysis: Reinterpreting Learning Strategies

Any discussion of error analysis as a linguistic discipline should begin, I believe, with an understanding of the relationship between error analysis and contrastive analysis. Contrastive analysis has two clearly differentiated versions:

apriori contrastive analysis, i.e. the predictive or strong version, and

aposteriori contrastive analysis, i.e. the explanatory or weak version. The apriori, strong or predictive version is predicated on a point by point, feature by feature comparison of the subsystems of any two languages, say X and Y. The purpose of such a comparison is the discovery of the similarities and, in particular, the differences between these two languages, X and Y. The assumption which follows is that points of difference between X and Y mean areas of difficulty for natives of X learning Y as a second language. The result of these difficulties are predicted errors in the acquisition process. However, as often pointed out, apriori contrastive analysis has been able to predict only some of the errors which learners produce. The predictions of apriori contrastive analysis are often ambiguous and do vary according to the linguistic model used for description. These points of difference, even when identified by contrastive analysis, do not always exhibit the same degree of difficulty. The assumption of contrastive analysis that whole systems of any two languages come into contact -- except at very advanced stages -- has been questioned as well as the assumption that learners actually use native language elements in the acquisition of a second language.

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The aposteriori or explanatory version of contrastive analysis takes the errors in the language acquisition process as a starting point for language comparisons. The constructions of language X are then compared with those of language Y in order to discover why and in which way these errors have occurred. Some linguists even go so far as to consider aposteriori contrastive analysis as a subcomponent of error analysis itself.

Error analysis, if we include aposteriori contrastive analysis as one element, is also a comparative process. The object, as the name implies, is to explain errors linguistically and psychologically in order to help the learner in the language acquisition process. Two objects of an error analysis accoding to Corder (1971:158) are "to elucidate what and how a learner learns when he studies a second language" and to enable "the learner to learn more efficiently by exploiting our knowledge of his dialect for pedagogical purposes." "We want to identify the differences between the two sets of rules and discover what he [the learner] has still to learn, so that we may take appropriate and remedial action, and, in a more general way, identify the principal learning tasks of a given group of learners in order to incorporate this knowledge in the divising of our syllabuses and teaching materials" (Corder 1973a:37). Error analysis is then both a part of the methodology for the psycholinguistic investigation of second language acquisition as well as a part of the teaching-learning methods and materials reevaluation process. From the study of a learner's errors we can infer the nature of his knowledge of the second language at any particular point in his learning career. We can draw conclusions regarding what has already been learned and what still has to be learned.

As Valdman (1975:219) states, "errors are not to be viewed as pathological manifestations to be eradicated, but constitute instead the most direct evidence of the learner's hypotheses and strategies."

The second language acquisition process is a dynamic one; "it is a process of interaction between the learner and the data provided -- the teacher and materials" (Corder 1973a:38). It is a type of data-processing and hypothesis-formulating activity of a cognitive sort. This necessitates a regular series of checks on the development of the learner's grammar in order to discover what effect the exposure to certain data has had on the state of this grammar. We know from numerous studies of children that the acquisition of language is a systematic, rule-governed, developmental process based upon the differentiating internalization of specific language features. It is governed by the principles of hypothesis formulation, hypothesis testing and hypothesis reevaluation and guided by some sort of cognitive acquisition device -- perhaps innate -- either specifically for language development alone or for cognitive development in general. We know that language acquisition is systematic because of the systematic nature of errors produced by children. We know that language acquisition is rule-governed because of the ability of children to reduce raw language data to simpler patterns which are then creatively extended to different concepts and contexts. We know that language acquisition is developmental because of the ever expanding growth in comprehension and use of specific language features not present at earlier stages. If we postulate the same acquisition mechanism or processes in first and second language learning, then we may also postulate that the procedures or strategies of first and second language learners are fundamentally similar. That is not to say that first and second

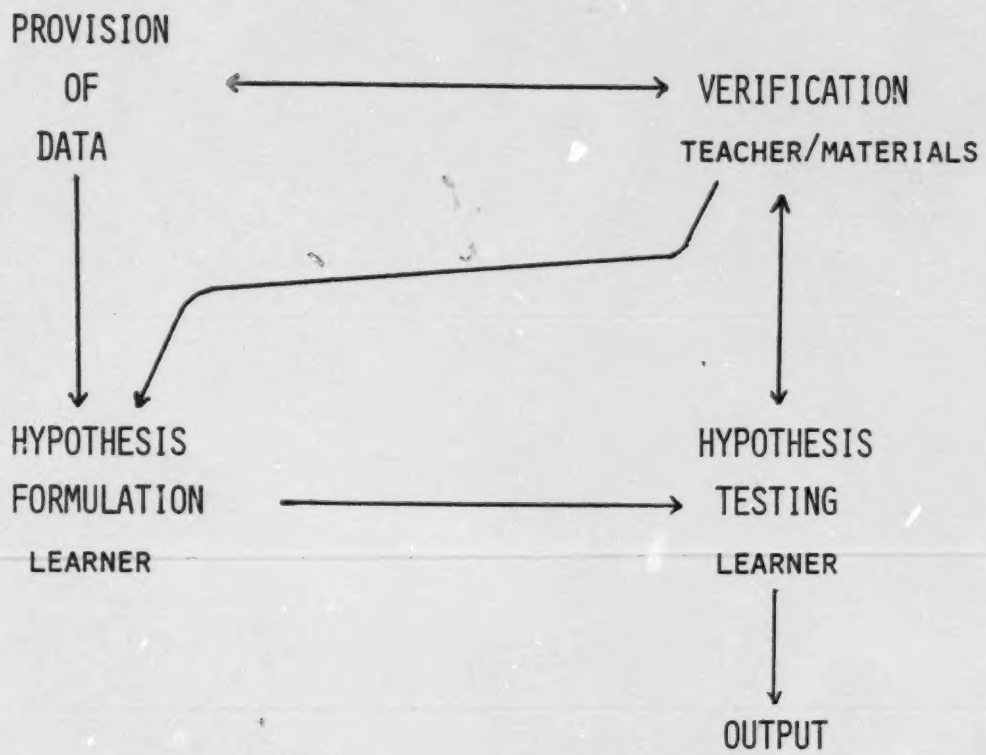
language acquisition are the same. There are substantial differences which have been pointed out by several researchers. What it does say is that at least some of the strategies and hypotheses adopted by second language learners are similar to or parallel to those involved in first language acquisition. In second language acquisition, however, we are really somewhat privileged. The adolescent or adult learner comes equipped with a metalanguage which the child or first language learner does not possess. The adolescent or adult learner has the ability to verbalize and to discuss his hypotheses about particular features of the second language.

The assumption underlying error analysis is that the errors discovered and described are evidence of a system which is neither the system of the native language nor of the target language, but the system of some 'other' language. It is this 'other' language which error analysis attempts to describe. This 'other' language, whether it is called an idiosyncratic dialect, an approximative system or an interlanguage, is still a language, a natural language, so that "the language learner at all points of his learning career 'has a language', in the sense that his behavior is rule-governed and therefore, in principle, describable in linguistic terms" (Corder 1973a:36). At each successive stage of learning the learner possesses a different transitional grammar of the target language. The first interlanguage system is formulated at the earliest attempts to use the target language. Perhaps the first hypotheses the second language learner formulates and tests are Corder's (1967:168) suggested hypotheses:

> "Are the systems of the new language the same or different from those of the language I know? And if different, what is their nature?"

The earliest stages are characterized by extensive underdifferentiation of phonological, grammatical and lexical categories of the target language. The learner is constantly extending or overextending the distribution of the formal features of the target language with which he is already relatively familiar. Since only a very small number of learners ever acquire true native competence in a second language, there is really no final stage for the most advanced second language learner. The interlanguage grammar at its highest state of perfection still only approximates the grammar of the target language.

Second language acquisition proceeds by a series of such approximative reorganizations. Valdman (1975:223) supplies us with a static algorithm for the acquisition of second language in the classroom.



ALGORITHM FOR THE ACQUISITION OF SECOND LANGUAGE IN THE CLASSROOM

Language acquisition is not static, however, but a dynamic process where prior learning and experience continuously influence subsequent learning. Learners are constantly modifying their hypotheses about the target language. "At any given time several hypotheses may be in conflict, and the learner's approximation of the target language will show alternative renditions of individual features" (Valdman 1975:224). "If, however, we could say 'stop' for a moment we could regard the learner's language at that point as a peculiar 'dialect'of the target language, differing in many crucial aspects from it and perhaps having some characteristics of his mother tongue. It would possibly be simpler and more regular, in the sense of being describable by fewer rules, and probably impoverished, in the sense of not providing the means for expressing all the messages the learner wished to convey or receive" (Corder 1974:22).

Corder (1971:153) proposes that individuals having similar linguistic and cultural backgrounds and similar learning experiences may share similar rules and a similar course of development in second language acquisition. I have gathered information on the acquisition of case in German which shows some similar developments taking place. My study is cross-sectional and I have transcribed about 150 sets of data. The assumptions at the outset were that similar processes of a group development should be present in a cross-sectional study and that various individuals should provide evidence for the variety of stages in this common development. Again following two suggestions by Corder (1973a:43) that learners should be able to make judgements about the acceptability of forms and that they should also be able to give translational equivalents, I devised a two stage elicitation procedure which asked the learner to judge the grammaticality of 30 sentences

in German and then to form a German sentence using a set of given lexical items in response to an oral English cue. These first two stages were presented orally and the responses were recorded on tape. A few days later the students were presented with the same 30 sentences in German -- this time in a written format and in a different order. The scores of the two grammaticality judgements -- the oral and the written -- were correlated to check the reliability of the data. A high correlation should indicate a stable set of decision making criteria -- whatever they may be. A low correlation should indicate the lack of a stable set of such criteria.

The most simplified approximative system, both in its outer and inner form, was a 'caseless' system; a system where overt case markings were rare and where case seemed to play only the slightest role in the interlanguage system. An extremely 'stable' set of criteria for making decisions [.85 on the oral and written grammaticality judgements] was matched with gross substitutions of the base form regardless of syntactic or semantic restrictions:

*SIE ACHTET NIE DAS WETTER AUF.

ER IST IMMER BÖSE AUF SEINE FREUNDIN.

*DIE STUDENTEN WOLLEN DER PREIS PROTESTIEREN GEGEN.

*ICH HABE MEINER BRUDER WARTEN AUF HEUTE NACHMITTAG.

*DAS BABY GLEICHT DER VATER.

In some instances, the responses could be interpreted as possible accusatives, but a more precise analysis seems to reveal the use of the base form in all instances, resulting in a 'caseless' system.

The incorporation of the masculine accusative definite article 'den' into the interlanguage system seems to be the single feature which distinguishes a 'caseless' system from a one-case system. A one-case system in its most

rudimentary form is characterized by a distinction which I call pre-verbal vs. post-verbal salience. Any pre-verbal noun is equated with the category of 'subject', and is therefore in the nominative, and any post-verbal noun is equated with the category of 'non-subject', and is therefore in the accusative. This first system is quickly surpassed, but vestiges can be seen in the following example:

*DER POLIZIST WAR EINEN ALTEN MANN.

"PREDICATE NOMINATIVE MARKED AS ACCUSATIVE OBJECT"

This type of sentence was considered grammatical 71% of the time on the oral check of grammaticality and 59% of the time on the written check of grammaticality.

One learner's system was found which closely approximates a one-case system. To cite examples from this system:

*DIE KATZE SITZT AUF DAS BETT.

*TÄGLICH GEHE ICH ZU DIE UNIVERSITÄT.

*ER ANTWORTET DEN LEHRER NIE.

*DAS BABY GLEICHT DEN VATER.

All of the above cases should be overtly marked as dative, but are marked as accusative. In no instance is there any indication that another case exists in this interlanguage system.

In several particular systems the first instances of the transition to a two-case system were found. The use of the dative was first found after prepositions:

*ICH MUSS HEUTE NACHMITTAG MEINEN BRUDER WARTEN AUF.

*MEIN FREUND WIRD NÄCHSTES JAHR DAS STUDENTENWOHNHEIM WOHNT IN.

WITH FAULTY POSITIONING OF THE PREPOSITION AS A SEPARABLE PREFIX

BUT

ICH GEHE TÄGLICH ZU DER UNIVERSITÄT.

DIE KATZE SITZT AUF DEM BETT.

WITH THE DATIVE CASE OCCURRING AFTER PREPOSITIONS.

This dative usage seems to be a lexical rather than a syntactic marking in many early instances. Of all the items requiring a preposition followed by the dative case the most consistently well-formed items were "bei den Eltern" and "auf dem Bett", frequent phrases in early textual material.

The further acquisition of a two-case interlanguage system was found to be a long gradual continuum with systems reflecting anything from haphazard markings to extremely consistent and highly proficient marking systems. A few examples from a completely haphazard system are:

*ER IST IMMER BÖSE AUF DER FREUNDIN.

*MEIN VATER FRAGT NACH DER WEG ZUR STADT.

*ICH GEHE ZU TÄGLICH DIE UNIVERSITÄT.

*ICH FREUE MICH AUF SCHON DIE SOMMERFERIEN.

This system is haphazard in that case usage can definitely be recognized, but the overt markings are whimsical and even impossible in some instances.

Before presenting the most complete and consistent examples of learner systems, one general tendency should be stated. There is a marked tendency to use accusative forms over dative forms in all types of elicitation. This might be explained on the basis of the ordering imposed on the learners by the teaching materials where accusative usage is introduced before that of the dative. Of the total responses on the oral sentences 56% were marked as accusative, 34% were marked as dative and 9% were marked as nominative.

The most fully developed systems showed not only a very stable system [.93 on the oral and written checks of grammaticality], but also a strikingly correct system as revealed on the production tests:

DIE KATZE SITZT AUF DEM BETT.

*MEIN VATER FRAGT NACH DER WEG ZUR STADT.

ER HAT SEINEM BRUDER NICHTS ZURÜCKGEGEBEN.

*MEINE SCHWESTER WOHNE NOCH BEI DEN ELTERN.

ICH GEHE TÄGLICH ZU DER UNIVERSITÄT.

MEIN FREUND WIRD NÄCHSTES JAHR IN DEM STUDENTENWOHNHEIM WOHNEN.

ER ANTWORTET NIE DEM LEHRER.

*DAS BABY GLEICHT DEN VATER.

This system, as stable and proficient as it is, still only approximates that of a native speaker of German.

In the acquisition of case in German by American students in the classroom, five stages were distinguished:

1. a 'caseless' system where only the base form was used
2. a 'one-case' system differentiating subject from non-subject which was marked as accusative and pre-verbal vs. post-verbal salience
3. the non-subject being differentiated first lexically with dative markings
4. an inconsistent 'two-case' system where both cases seem present in the inner form, but often wrongly or inappropriately marked in the outer form
5. a coherent 'two-case' system where a stable set of judgemental criteria coincide with a high level of performance.

Corder (1973b:270-272, 1974:131) has proposed a three stage development in the acquisition of any grammatical feature. His stages are:

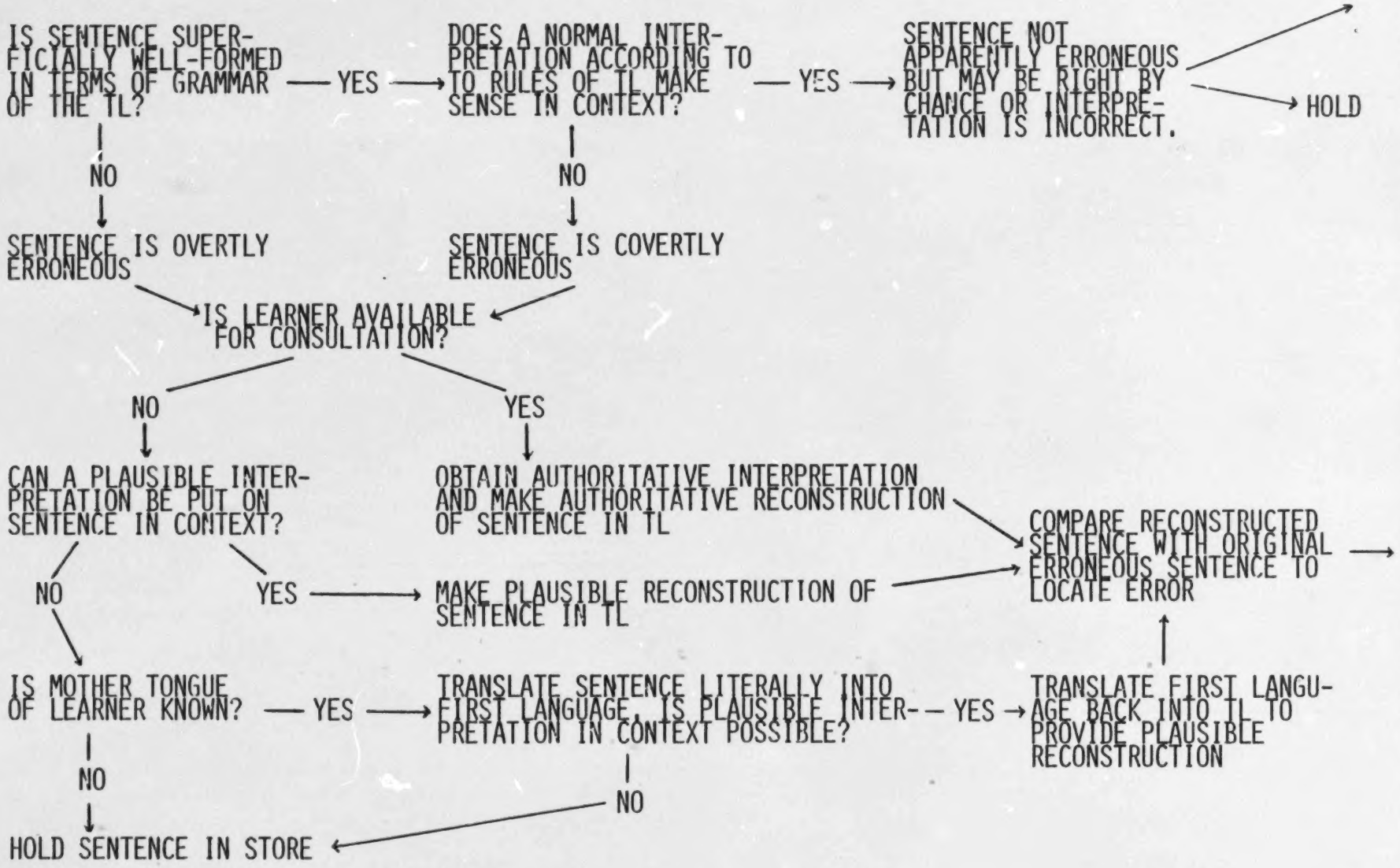
1. A pre-systematic stage where the learner is unaware of a particular rule in the target language and gets things wrong most of the time.
2. A systematic stage where the learner has discovered and is operating with a rule of some sort, although it is the wrong one and he regularly makes errors.
3. A post-systematic stage where the learner has learned the correct rule, but often forgets to apply it or applies it inconsistently. This is the stage of practice.

I think that these stages can be seen in the five stages described above.

The first step in an error analysis is to devise a procedure which will make available a workable quantity and wide variety of learner errors. It has been shown that learners' spontaneous productions are error-avoiding because the learner will consciously limit his productions to include only features he can control. To elicit information without these imposed constraints the learner has to be 'put on the spot'. Constraints must, therefore, be imposed on the learner so that he is forced to make choices within a restricted area and forced to produce in a controlled environment. This is the basis for the sentence production procedure in my study of the acquisition of case in German. The learner, then, cannot freely pick the constructions he uses and cannot freely limit his utterances to include only the features he can control.

The next step in error analysis is the recognition of idiosyncratic

sentences. In general, every learner's sentence is regarded as deviant until shown to be otherwise. Each sentence should be interpreted according to the following process to recognize and identify errors on the part of the learner (Corder 1974:129):


IS SENTENCE SUPERFICIALLY WELL-FORMED IN TERMS OF GRAMMAR OF THE TL?
YES
DOES A NORMAL INTERPRETATION ACCORDING TO TO RULES OF TL MAKE SENSE IN CONTEXT?
YES
SENTENCE NOT APPARENTLY ERRONEOUS BUT MAY BE RIGHT BY CHANCE OR INTERPRETATION IS INCORRECT.
HOLD
NO
NO
SENTENCE IS OVERTLY ERRONEOUS
SENTENCE IS COVERTLY ERRONEOUS
IS LEARNER AVAILABLE FOR CONSULTATION?
NO
YES
CAN A PLAUSIBLE INTERPRETATION BE PUT ON SENTENCE IN CONTEXT?
OBTAIN AUTHORITATIVE INTERPRETATION AND MAKE AUTHORITATIVE RECONSTRUCTION OF SENTENCE IN TL
COMPARE RECONSTRUCTED SENTENCE WITH ORIGINAL ERRONEOUS SENTENCE TO LOCATE ERROR
NO
YES
MAKE PLAUSIBLE RECONSTRUCTION OF SENTENCE IN TL
IS MOTHER TONGUE OF LEARNER KNOWN?
YES
TRANSLATE SENTENCE LITERALLY INTO FIRST LANGUAGE. IS PLAUSIBLE INTERPRETATION IN CONTEXT POSSIBLE?
YES
TRANSLATE FIRST LANGUAGE BACK INTO TL TO PROVIDE PLAUSIBLE RECONSTRUCTION
NO
NO
HOLD SENTENCE IN STORE

THE PROCESS OF RECOGNIZING AND IDENTIFYING ERRORS

Richards (1971a:98) distinguishes three major categories of errors:

1. Interference or transfer errors where the rules of the native language are falsely applied to target language features.
2. Intralingual errors which reflect general characteristics of rule learning, and
3. Developmental errors which reflect attempts to form hypotheses from limited comprehension of distinctions in the target language.

Intralingual errors are subdivided into three error types:

A. Overgeneralization, also called overlearning, which involves the creation of a deviant structure on the basis of experience of other structures in the target language.

   he sings *he can sings *he is sings

B. Ignorance of rule restrictions which involves application of rules to contexts where they do not apply.

   he showed me the book *he explained me the book

C. Incomplete application of rules which involves only the partial application of the rules required to produce an utterance.

   What does she tell him? *She tell him much.

To these error types should be added two additional categories of errors:

1. Teaching induced errors where the methods employed or the materials used in teaching lead the learner to false conclusions about structures in the target language. This might explain the overuse of accusative markings in German seen above.
2. 'Invisible' or 'silent' errors where the learner avoids the use of structures that have not been mastered. Schachter (1974) describes how certain learners avoid the use of relative clauses in English because of the alleged difficulty involved.

The third step in error analysis is to check for systematic errors based upon the comparisons of the learner's original sentences with the reconstructed sentences. A taxonomy of systematic errors results in a description of the learner's interlanguage grammar or idiosyncratic dialect at a particular stage of development.

The final step is the explanation of errors. Error analysis "attempts to account for how and why the learner's idiosyncratic dialect is of the nature it is" (Corder 1971:158). It is here that the apparent learner strategies or hypotheses are enumerated. It is this stage which makes error analysis a part of the psycholinguistic investigation of second language acquisition.

Before I discuss a few examples of learner sentences in light of the algorithm proposed above for the identification of errors, I would like to make a short aside. S. Pit Corder has applied these same procedures of error analysis to native speakers of English. [There is a description of an error analysis of a young girl from Glasgow in Corder 1974:131-133 and 137-141.] I would propose that this algorithm could readily be applied in the English composition classroom at all levels. Such an application might reveal the systematic nature of 'errors'-- if indeed we can call them so -- made by native speakers.

The following sentences taken from foreign students studying English as a second language in the United States illustrate four different branchings along Corder's proposed algorithm for recognizing and identifying errors:

ALTHOUGH THE BICYCLE WOULD BE SLOWER IT WOULD BE SAFER.

THIS INTERNATIONAL ORGANIZATION HAD MADE A LOT OF GOOD THINGS FOR ALL THE WORLD.
#THIS INTERNATIONAL ORGANIZATION HAD DONE A LOT OF GOOD THINGS FOR ALL THE WORLD#

THAT DID IT DO FOR THIS TIME?
#WHAT DID IT DO FOR THIS TIME?#

IT WILL BE KIND OF JUSTY IF THE GOVERNMENT MAKES A SPECIAL LANE, ALONG THE STREET, FOR THE BICYCLE RIDERS.
#IT WOULD BE A KIND OF ??? IF THE GOVERNMENT MADE A SPECIAL LANE NEXT TO THE STREET FOR THE BICYCLE RIDERS#

Error analysis, as I have briefly outlined above, provides a better description of a learner's idiosyncratic dialect which contributes directly to a more complete account of what a learner knows and does not know at a particular moment in his learning career and should ultimately enable the teacher to supply the learner not just with the information about which hypotheses are wrong, but also more importantly with the right sort of data for the formulation of more adequate concepts of the rules in the target language.

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